



## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 77

### Federal Aviation Administration Policy: Review of Solar Energy System Projects on Federally-Obligated Airports

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Notification of policy.

**SUMMARY:** This document establishes FAA policy for proposals by sponsors of federally-obligated airports to construct solar energy systems on airport property. FAA is publishing this policy because it is in the public interest to enhance safety by analyzing ocular impact of proposed solar energy systems on airport traffic control tower personnel. The policy applies to proposed on-airport solar energy systems at federally-obligated towered airports. This policy replaces the Interim Policy published on October 23, 2013.

**DATES:** The effective date of this policy is [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You can obtain an electronic copy of this Policy and all other documents in this docket using the internet by:

- (1) Searching the Federal eRulemaking portal (<http://www.faa.gov/regulations/search>);
- (2) Visiting FAA's Regulations and Policies webpage at ([http://www.faa.gov/regulations\\_policies](http://www.faa.gov/regulations_policies)); or
- (3) Accessing the Government Printing Office's webpage at (<http://www.gpoaccess.gov>).

You can also obtain a copy by sending a request to FAA, Airport Planning and Environmental Division, 800 Independence Ave SW, Washington, DC 20591, or by calling (202) 267-3263.

Make sure to identify the docket number, document number or amendment number of this proceeding.

**FOR FURTHER POLICY INFORMATION CONTACT:** Mike Hines, Manager, Airport Planning and Environmental Division, APP-400, Federal Aviation Administration, 800 Independence Ave, SW., Washington, DC 20591, telephone (202) 267-8772; email: Michael.Hines@faa.gov.

**SUPPLEMENTARY INFORMATION:** Authority for the Policy: This policy is published under the authority described in Title 49 of the United States Code, subtitle VII, part B, Chapter 471, Section 47122(a).

### **Background**

\_\_\_\_\_In October 2013, FAA issued an interim policy for proposals by sponsors of federally-obligated airports to construct solar energy systems on airport property. 78 FR 63276, October 23, 2013.

There is continued interest in installing solar photovoltaic (PV) and solar hot water (SHW) systems on airports. While solar PV or SHW systems (henceforth referred to as solar energy systems) are designed to absorb solar energy to maximize electrical energy production or the heating of water, in certain situations the glass surfaces of the solar energy systems can reflect sunlight and produce glint (a momentary flash of bright light) and glare (a continuous source of bright light). FAA has learned that glint and glare from solar energy systems could result in an ocular impact to airport traffic control tower (ATCT) personnel working in the tower cab, and compromise the safety of the air transportation system. FAA is issuing this policy pursuant to its authority under title 14 of the Code of Federal Regulations (CFR), part 77, with the intent to ensure the safety of the development of solar energy systems on airport property by eliminating the potential for ocular impact to the ATCT cab from these systems.

FAA established a cross-organizational working group in 2012 to establish a standard for measuring glint and glare, and clear thresholds for when glint and glare would impact aviation safety. This resulted in FAA's 2013 Interim Policy on Review of Solar Energy Systems at Federally-Obligated Airports, referenced above.

The Interim Policy required federally-obligated airports to conduct an ocular analysis of potential glint and glare effects to pilots on final approach and ATCT cabs before construction begins. The policy also included a standard for measuring ocular impact and a recommended tool for measuring ocular impact.

FAA received 20 comments on the Interim Policy. The majority of comments were from persons who are involved with the solar energy industry. FAA also received comments from the Airport Consultants Council (ACC) on behalf of its membership. The comments were largely focused on requirements in the interim policy that FAA is not carrying forward to this updated policy.

### **Developments Since Interim Policy**

The Interim Policy stated that “FAA expects to continue to update these policies and procedures as part of an iterative process as new information and technologies become available.” This is in keeping with FAA’s obligation under 49 U.S.C. 47122(a) to continually incorporate new information on safety considerations, and update policies and procedures as appropriate. In keeping with these statements, FAA reviewed the comments received on the Interim Policy and continued to collect additional information on ocular impacts of proposed solar energy systems.

Initially, FAA believed that solar energy systems could introduce a novel glint and glare effect to pilots on final approach. FAA has subsequently concluded that in most cases, the glint and glare from solar energy systems to pilots on final approach is similar to glint and glare pilots routinely experience from water bodies, glass-façade buildings, parking lots, and similar features. However, FAA has continued to receive reports of potential glint and glare from on-airport solar energy systems on personnel working in ATCT cabs. Therefore, FAA has determined the scope of agency policy should be focused on the impact of on-airport solar energy systems to federally-obligated towered airports, specifically the airport’s ATCT cab.

The policy in this document updates and replaces the previous policy by encouraging airport sponsors to conduct an ocular analysis of potential impacts to ATCT cabs prior to submittal of a Notice of Proposed Construction or Alteration Form 7460-1 (hereinafter Form 7460-1). Airport sponsors are no longer required to submit the results of an ocular analysis to FAA. Instead, to demonstrate compliance with 14 CFR 77.5(c), FAA will rely on the submittal of Form 7460-1 in which the sponsor confirms that it has analyzed the potential for glint and glare and determined there is no potential for ocular impact to the airport's ATCT cab. This process will enable FAA to evaluate the solar energy system project, with assurance that the system will not impact the ATCT cab.

FAA is also withdrawing the recommended tool for ocular impact, the Solar Glare Hazard Analysis Tool (SGHAT). The Interim Policy mandated the use of SGHAT, developed independently by Sandia National Laboratories. The tool is no longer available to all users at no cost. There are several glint/glare analysis tools available to airport sponsors on the open market, but FAA is not requiring or endorsing a specific tool for assessing ocular impact. In addition, FAA acknowledges that in some cases a tool may not be required to support a sponsor's statement that a proposed solar energy system will not impact an ATCT cab. The primary example is a proposed on-airport solar energy system that is not visible from an ATCT cab because it is blocked by another structure.

This policy does not apply to:

1. Solar energy systems on airports that do not have an ATCT,
2. Airports that are not federally-obligated, or
3. Solar energy systems not located on airport property.

Though this policy does not apply to proponents of solar energy systems located off airport property, they are encouraged to consider ocular impact for proposed systems in proximity to

airports with ATCTs. In these cases, solar energy system proponents should coordinate with the local airport sponsor.

### **FAA Policy: Review of Solar Energy System Projects on Federally-Obligated Airports**

The following sets forth FAA's policy for analyzing ocular impact and the obligations of an Airport Sponsor when a solar energy system is proposed for development on a federally-obligated airport with an ATCT.

It is in the public interest to enhance safety by analyzing ocular impact of proposed solar energy systems at federally-obligated towered airports. The policy applies to any proposed solar energy system on a federally-obligated towered airport.

### **Standard for Analyzing Ocular Impact**

For federally-obligated towered airports, the airport sponsor will revise an Airport Layout Plan to depict proposed solar installations of any size that are not co-located with an existing structure and require a new footprint (as required by 49 U.S.C. 47107(a)(16)(A)). The airport sponsor will also file a Notice of Proposed Construction or Alteration Form 7460-1 (as required by 14 CFR 77.9). To demonstrate compliance with 14 CFR 77.5(c), FAA will rely on the airport sponsor to include a statement in its completed Form 7460-1 that the proposed solar project will not result in ocular (i.e. glint or glare) impacts to the airport's ATCT cab. The airport sponsor is encouraged to conduct an ocular analysis of potential impacts to ATCT cabs prior to the submittal of its Form 7460-1. If the 7460-1 evaluation results in a "no objection" finding, FAA will include the following statement in the aeronautical study determination:

*FAA relies on the airport sponsor's statement in the submitted Form 7460-1 that it has proposed a project that will not create ocular (i.e., glint or glare) impacts to personnel in the airport's airport traffic control tower. If impacts to the airport traffic control tower are discovered after construction, the Sponsor must mitigate those impacts at its own expense. The Sponsor remains subject to a compliance action under 14 CFR Part 16 for failing to mitigate ocular impacts that interfere with aviation safety.*

## **Tools to Assess Ocular Impact**

FAA encourages airport sponsors of federally-obligated towered airports to conduct a sufficient analysis to support their assertion that a proposed solar energy system will not result in ocular impacts. There are several tools available on the open market to airport sponsors that can analyze potential glint and glare to an ATCT cab. For proposed systems that will clearly not impact ATCT cabs (e.g., on-airport solar energy systems that are blocked from the ATCT cab's view by another structure), the use of such tools may not be necessary to support the assertion that a proposed solar energy system will not result in ocular impacts. FAA suggests that airport sponsors with questions about conducting this analysis contact their local FAA Airports District Office (or Regional Office for those Regions without District Offices) during the early stages of a solar energy system siting process. Regional and Airports District Offices are available to provide assistance with this process.

## **Integration of this Policy Statement into FAA Orders and Publications**

FAA will incorporate this policy into applicable FAA Orders and publications, such as Advisory Circulars, as they are updated. The agency will also continually review this policy in the interest of aviation safety. FAA reserves the right to update this policy if the agency collects or receives additional information on glint and glare from on-airport solar energy systems. The FAA will incorporate any updates into applicable FAA Orders and publications.

This policy does not have the force and effect of law and is not meant to bind the public in any way, it is intended only to provide clarity to the public regarding existing requirements under the law or agency policies.

Issued in Washington, DC.

**Robert John Craven,**

*Director, Airport Planning and Programming.*